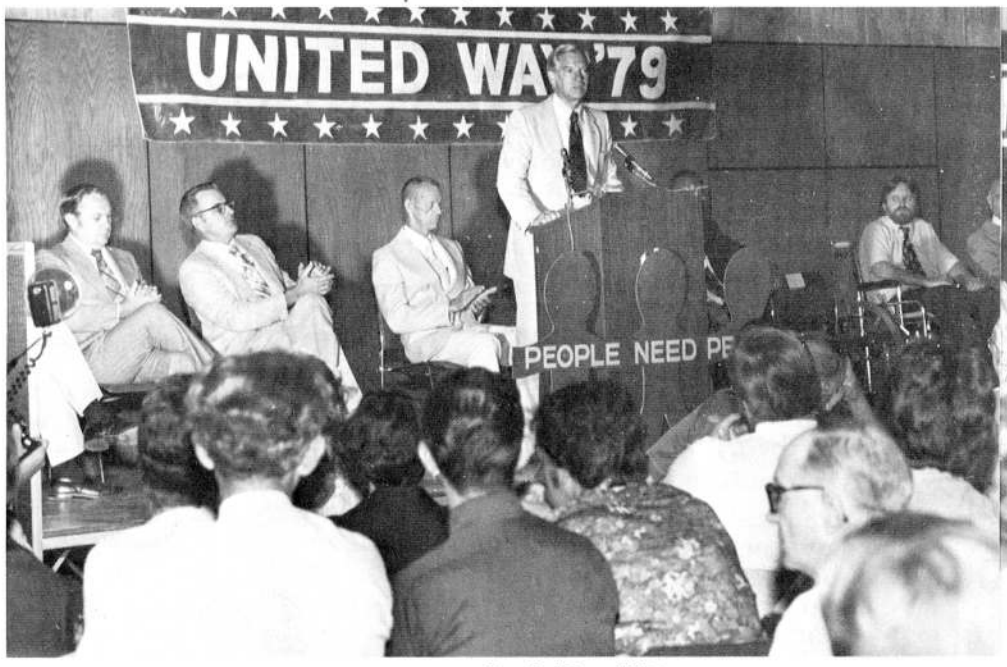
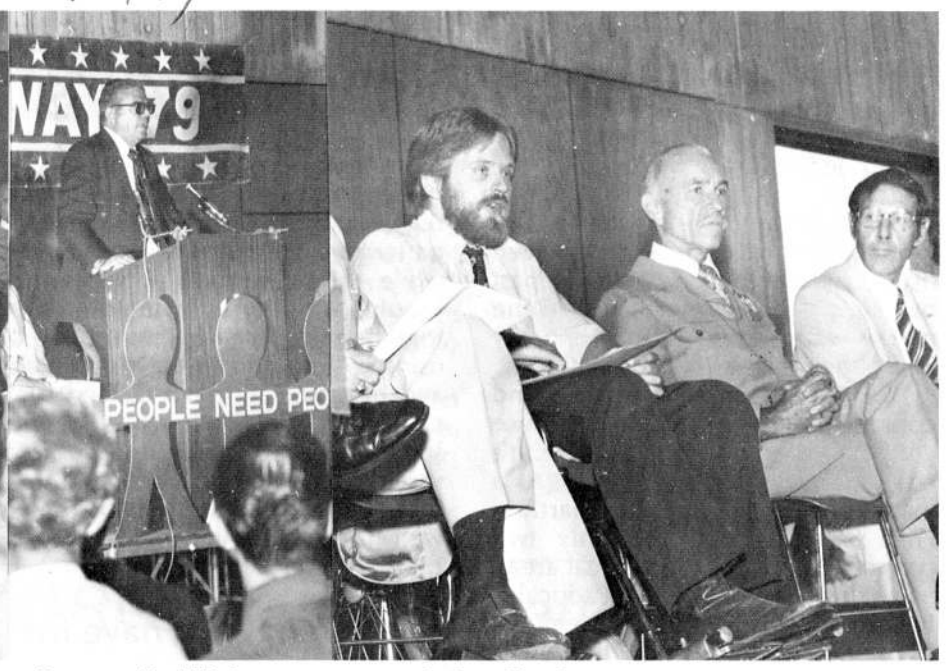
N79-120



Jack Proffitt

N79-119



Roger F. Hibbs

John Hudson

Division employees launch United Way drive

Some 600 Division employees had the opportunity to observe some of the many ways that United Way agencies contribute to their communities during the 1979 United Way kickoff meeting, September 14 at the Oak Ridge Civic Center.

The employees, most of whom are United Way solicitors and fund workers for their departments, were able to view special exhibits presented by many of the more than 100 agencies—representing Anderson, Blount, Knox, Loudon, Morgan and Roane Counties — that receive funds through the United Way. The activities of the various agencies were depicted by brochures, charts, photo displays, videotapes and demonstrations.

Speakers for the meeting included Nuclear Division President Roger F. Hibbs; John Hudson, an employee of the Cerebral Palsy Center and a former Handicapped Citizen of the Year in East Tennessee; and Jack Proffitt, president of the Knoxville Chamber of Commerce and vice president of finance for EXPO '82.

After praising Union Carbide employees for their continued participation in the United Way drive, Hibbs announced an increase in the Division's total contribution from $21,500 last year to $26,000 in 1979. "This amount will be distributed to those major counties where our employees live in proportion to the giving level of the employees in each of these counties," he said.

Hudson spoke from his wheelchair, relating the story of his own handicap and mentioning others who have been afflicted from birth. He urged those in attendance to "accept the challenge and responsibility" and to continue their commitments to their fellow citizens.

Proffitt, former chairman of the board of Proffitt's Department Stores, reviewed his involvement with the United Way in Blount, Knox and Anderson Counties. He told the Division employees, "I want you to do two things. I want you to contribute financially to the campaign, and I especially want you to give of yourselves."

He asked the workers to visit some of the facilities supported by the United Way so that they could explain to others just how their dollars are being spent.

James A. Cox heads the 1979 campaign for the three Oak Ridge facilities.

NUCLEAR DIVISION NEWS

UNION CARBIDE

a newspaper for employees of the nuclear division • union carbide corporation

Vol. 10/No. 18 September 20, 1979

Corporate world of Union Carbide. . .

Union Carbide Corporation's objective is to double its annual net income, to more than $800 million, between 1978 and 1983, Warren M. Anderson, president, recently told a meeting of security analysts. The corporation also has a target of at least $13 billion in sales by 1983, he said.

Union Carbide reported net income of $394 million on sales of $7.8 billion in 1978.

The corporation's goal includes generation of $330-$365 million in additional net income from six of the corporation's businesses that will represent about 75 percent of its net assets employed by 1983, Anderson added. These businesses, and the amounts of incremental net income targeted for each, are:

Agricultural Products, $25-30 million; Battery Products, $50-55 million; Chemicals, $75-80 million; Graphite Electrodes, $45-50 million; Industrial Gases, $75-80 million; Polyethylene, $60-70 million.

Anderson also said that Union Carbide's capital spending is expected to total about $5 billion in the next five years.

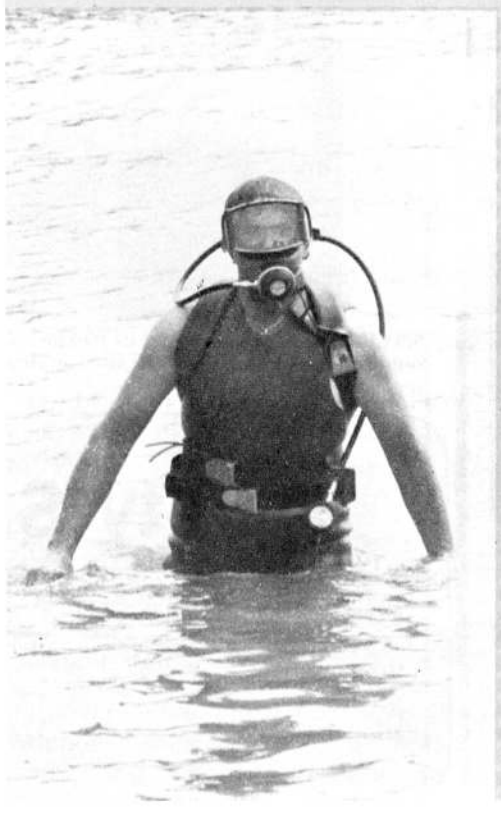
Union Carbide's targets are based on continuance of normal business cycles, continued availability of energy and feedstocks, and a percent annual inflation rate, Anderson said.

The corporation's management is confident that it is following strategies that will enable it to meet its objectives. Among these strategies is priority support to businesses in which Union Carbide has a strong competitive position and which have strong growth and profitability potential, Anderson said. Another strategy is to constrain growth of businesses in which the competitive capabilities or industry characteristics do not justify aggressive growth.

Still another Union Carbide strategy is to withdraw from businesses showing poor profit potential or lacking long term strategic fit. Anderson indicated 12 businesses that the corporation has divested or withdrawn from in 1977 and 1978. These business had annual sales of $582 million, but they generated only $2.8 million in net income and had a return on assets of less than one percent, Anderson said.

Union Carbide is also eliminating development and research projects that are unrelated to the corporation's basic direction and character. In 1977 and 1978, the corporation eliminated 25 such projects and thereby saved about $21 million in negative after-tax cash flow, Anderson said.

In this issue. .



Bud Jenkins, Paducah employee, has an interesting side-line, deep-sea diving in the murky waters around the area. He is commissioned to find everything from lost wedding rings to sunken barges. His story is on page 2.

Other features:

Different Drummer

'A cool head is a diver's greatest asset,'—Jenkins

Bud Jenkins still believes in the adventuresome eras of rugged individualism. For him, the pioneering spirit of exploring unseen domains is not a fantasy from the past but an avocation carried out in the murky waters of Western Kentucky and outlying areas.

"Diving requires nerves and courage," Jenkins said, "because you're allowed only one mistake. It's not an activity for everyone." As a matter of fact, Jenkins and his partner, Fred Scoggins, are the only two commercial divers in the local area.

Jenkins, an employee in Paducah's Power, Utilities and Chemicals Division, has performed this year-round underwater diversion for about four years. The unseen domains he penetrates aptly describe the black depths beneath this area's lakes and rivers.

'I know how a blind man must feel. . .'

"I have experienced the way a blind man feels," he explained. "You can't see your hand two inches from your face, so everything has to be done by feeling." In this way, Jenkins has managed to execute such momentous projects as raising sunken barges and houseboats to such tedious and exacting chores as locating lost wedding bands—all done with "no visibility."

Strategies vary depending on the task. Lost articles are generally recovered by working a search pattern in increasingly larger circles while raising a sunken vessel may require welding a series of drums together and floating it to the top or using a sling and lifting rig. Jenkins and his associate have tackled such challenges on both ends of the spectrum as well as numerous and varied activities in between. "If there's a job to be done underwater, we can do it," Jenkins said.

'You have to have five or six vocations. . . rigger, welder, blaster, etc.'

For this reason, diving is only one cog in the wheel. "To meet the needs of marine businesses, you need five or six vocations, like rigger, welder, blaster, etc.," Jenkins explained. "Every job seems to require something new."

But, regardless of the task, the success of every dive must rely on the diver's own skill and proficiency. Jenkins gained this basic expertise through a diving certification program in Louisville which adequately prepared him for the uncertainties of commercial diving.

"The first thing you learn are the basic requirements of diving," Jenkins said. Namely, you must know how to swim, you must **not** be claustrophobic and you must have a level head. "Panic is sure fire disaster," he added.

Signals to tender are communications with topside help.

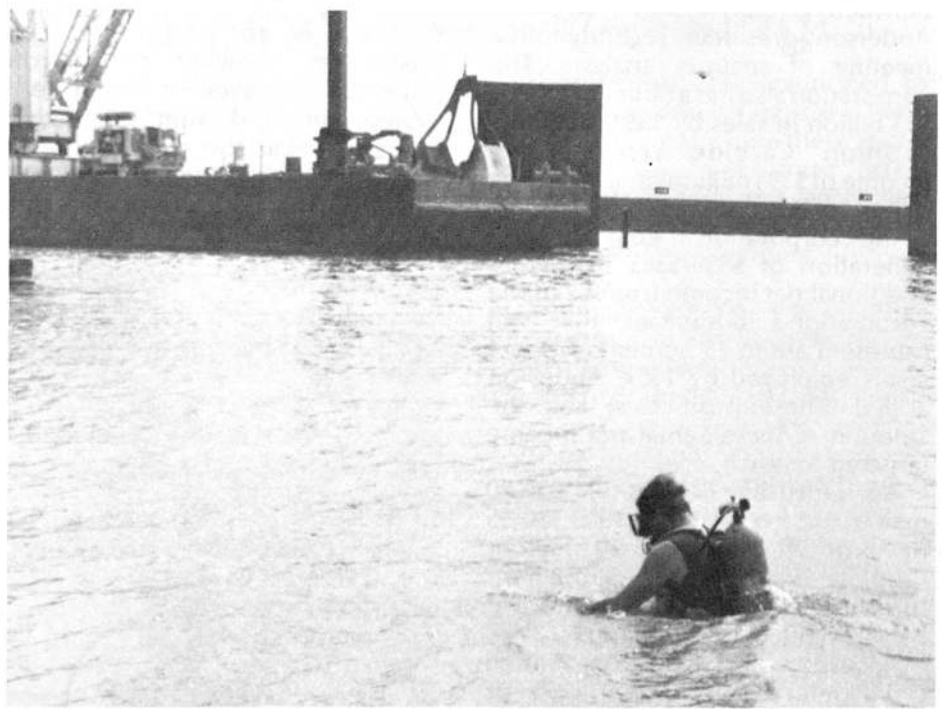
Among the many specialized tools and personal gear a commercial diver must equip himself with, one of the more important items is a knife. "The greatest danger is loss of air," Jenkins explained. "That's why you must always carry a knife to cut yourself free if your lines get tangled."

The tender, (a person required to tend the compressor and assist the diver) maintains the lifeline which is also used for communication. For example, one tug means stop, two means down, three means up and four is emergency.

Most of Jenkins' work requires diving to levels no deeper than 90 to 100 feet. However, despite the depth of the dive, Jenkins said, "The best advice I can give to prospective divers is to be calm and pace yourself. Never rise over 60 feet per minute and exhale slowly. A cool head is a diver's greatest asset."

MAINTENANCE REQUIRED—Proper maintenance and regular inspection are essential to ensure safe diving. Bud Jenkins fills his own tanks with 21 percent oxygen. Tanks should last 10 to 15 years if cared for properly.

EQUIPMENT EXPENSIVE—An intial investment of about $1,000 can equip a prospective diver with all the necessary equipment, Jenkins said. Top quality gear would cost about $1,800.



SPECIAL EQUIPMENT—Most of Jenkins' working equipment must be special ordered to do required marine maintenance such as clearing buoys from boat wheels, inspecting hulls or replacing cables.

Patent granted. . .

To Douglas N. Mashburn, Ralph R. Wright and Harold C. Woodall, all of ORGDP, for "Bearing Assembly and the Like for Use in Corrosive and Non-Corrosive Atmosphere."

Safety Scoreboard

Time worked without a lost-time accident through September 13:

Y-12 Plant	161 Days	5,136,000 Employee-Hours
ORGDP	275 Days	8,675,733 Employee-Hours
ORNL	172 Days	4,029,791 Employee-Hours
Paducah	112 Days	1,165,000 Employee-Hours

DIVISION LEADER—Charlie Moak, ORNL Physics Division, receives a continuing needed share pin from Audrey Livingston. Last year, Moak spearheaded his division drive for the United Way, taking his group 126 percent over its goal.

Reed appointed CPDF manager

W. Darryl Reed has been named manager of the Centrifuge Plant Demonstration Facility at ORGDP.

A native of Maryville, Reed, has a BS degree from the University of Tennessee in nuclear engineering. He joined Union Carbide in 1968 at the Y-12 Plant, and transferred to ORGDP in 1973.

Married to the former Susan Patrick, he lives at Route 3, Louisville, Tenn. The couple has a daughter, Katherine.

W. Darryl Reed

ORGDP classification analyst

David B. Gilliland has been named classification analyst in the Classification and Information Control Office at ORGDP. He joined Union Carbide in 1967 at the Y-12 Plant, transferring to the Materials and Services Division at ORGDP in 1973.

He has a BS degree from Maryville College and has also attended the University of Tennessee and the University of Maryland. He worked with the New York Life Insurance Company before coming to Y-12.

A native of Harriman, Gilliland and his wife Shirley, who works in the Capacity Expansion Management office at ORGDP, live on Russell Street in Harriman. They have two sons, Bruce and Sean.

David B. Gilliland

question box. . .

If you have questions on company policy, write the Editor, **Nuclear Division News** (or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.

Poor vending service

QUESTION: The milk-dispensing machine in Building 9201-5N at Y-12 consistently has spoiled milk, often days beyond the expiration date on the cartons. I have called Food Services several times to no avail. Isn't there some way employees in this area can obtain fresh milk?

ANSWER: It is not the intent of Union Carbide or the vending company that your building or any other building have out-of-date or spoiled food and/or drinks in the vending machines. Despite the best of plans, however, this may happen occasionally. Employees can help us maintain maximum control of this situation by informing the Food Services Department **promptly,** through their supervisor, when unacceptable food or drink comes out of the machine. If you have done this and problems still persist, call the matter, again as promptly as possible, to the attention of John Dougherty, UCC-ND Food Services Coordinator, extension 4-4404.

Dental insurance

QUESTION: I am confused about the effective date of my coverage under the Dental Expense Plan. When does a new employee's coverage become effective?

ANSWER: Eligibility begins on the first of the month upon or following completion of one year of Company Service. For example, an employee who was hired on May 1, 1978, and whose Company Service Credit was uninterrupted, would be eligible on May 1, 1979. If an employee were hired on May 2, 1978, or any other date later in that month, coverage would not begin until June 1, 1979.

Vacation eligibility

QUESTION: For someone who joined the Nuclear Division in September 1977, when is the first year in which he/she is entitled to three weeks' vacation? Four weeks?

ANSWER: If there is no break in employment, such an individual would be eligible for three weeks' vacation in 1982 and for four weeks' vacation in 1987. These vacations may be taken at any time during the year that is mutually acceptable to the employee and his/her supervisor.

Farmer promoted

Farmer

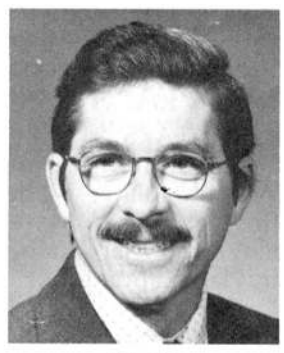
Fred Farmer has been promoted to a supervisor in the Metal Preparation Division at Y-12.

A native of Kitts, Ky., Farmer worked with the Clinchmore Coal Company and General Motors Corporation before joining Union Carbide in 1955. He also served in the U. S. Navy.

Farmer is married to the former Arvena Woods, and they live at Route 3, LaFollette. They have two married daughters, Ellen Marlow and Lynda Sieber; and two sons, Freddie and Jerry.

about people. . .

Mitchell



Shults

Toby J. Mitchell, a senior research staff member in the Mathematics and Statistics Research Department, Computer Sciences Division, has been named a Fellow of the American Statistical Association (ASA).

Mitchell, who has been with Union Carbide since 1966, was cited "for innovative contributions to the construction of experimental designs, for blending imagination and knowledge of statistical theory in consulting and research collaboration, for enthusiastic teaching, and for editorial services to the profession." His selection was announced to the ASA membership at the 1979 Joint Statistical Meetings in Washington, D.C., last week.

* * * * * *

Wilbur D. Shults, director of the Analytical Chemistry Division at ORNL, has been named chairman-elect of the American Chemical Society's Division of Analytical Chemistry. He is to become division chairman in October 1980.

Analytical Chemistry is the second largest of the 32 specialty divisions within the 116,000-member society. Its membership comprises some 4,200 analytical chemists working in academic, industrial and governmental laboratories throughout the U.S.

As chairman-elect, Shults will serve as divisional program chairman for the Fall 1980 and Spring 1981 national ACS meetings and participate in other executive functions involving the division and its interactions with other ACS units.

Shults recently completed a three-year term on the editorial board of the ACS-sponsored journal, *Analytical Chemistry.* He also has been secretary of the Analytical Chemistry Division's fellowship committee and is a past chairman of the analytical group of the ACS East Tennessee section.

His professional activities also have included service on two National Academy of Sciences—National Research Council panels on chlorine and hydrochloric acid and on environmental quality indicators, and on several committees of the American Society for Testing and Materials.

anniversaries. . .

ORGDP

35 YEARS

Raymond A. Greene, Engineering; Charles R. McAlister, Purchasing; Martin Franklin Jr., Operations; Hillery Jones, Security; Conley Loy, Maintenance; Jessie S. Howard, Finance and Materials; Walter S. Wendolkowski, Separation Systems; William H. Bullins, Operations; Elwood Stephens and Leon Smith, both in the Maintenance Division.

25 YEARS

Charles L. McCarty and William P. Teichert.

20 YEARS

Charles Renfron and Oren H. Myers.

ORNL

35 YEARS

Raymond D. Arthur, Chemical Technology; C. W. Moses, Plant and Equipment; and Jane Gurney, Engineering Physics.

30 YEARS

Fred L. Hannon, Engineering Technology; Ruth C. Kuhlo, Industrial Safety and Applied Health Physics; Robert D. Scofield, Quality Assurance and Inspection; Margaret T. Guthrie, Instrumentation and Controls; and Lorraine S. Abbott, Engineering Physics.

25 YEARS

Ray E. Potter, Walter D. Hoyle, William A. Bush, Wesley D. Arnold Jr., Kenneth J. Northcutt, and Anthony L. Bacarella.

20 YEARS

Melvin P. Stulberg, Billy E. Foster, Bernard J. Hannifin, Thomas G. Godfrey Jr., John C. Johnston, Billy J. Miller, and Ernest J. Shepherd.

Y-12 PLANT

35 YEARS

Charles E. Gillihan, Nuclear Materials Accountability; Madeline S. Franklin, Nuclear Materials Accountability; and Mary Katherine Housholder, Plant Laboratory.

30 YEARS

Rueben P. Wallace, Alpha Five West Shop; Troy D. Martin, Process Maintenance; and Kermit T. Teague, Guard Department.

25 YEARS

Charles C. Campbell, Kenneth W. Silvers, William R. McCollister, Jimmie D. Snow, Dulan B. Suttles, Furman R. Swanson, Kenneth E. Thomas, James E. Mills, Elizabeth K. Green, Chester Yeary, Sherwood G. Greene and Carl E. Conley.

20 YEARS

Paul A. Evans, Lloyd P. Stevens, Lon T. Nance Jr. and Charles F. Meadors.

Paducah

20 YEARS

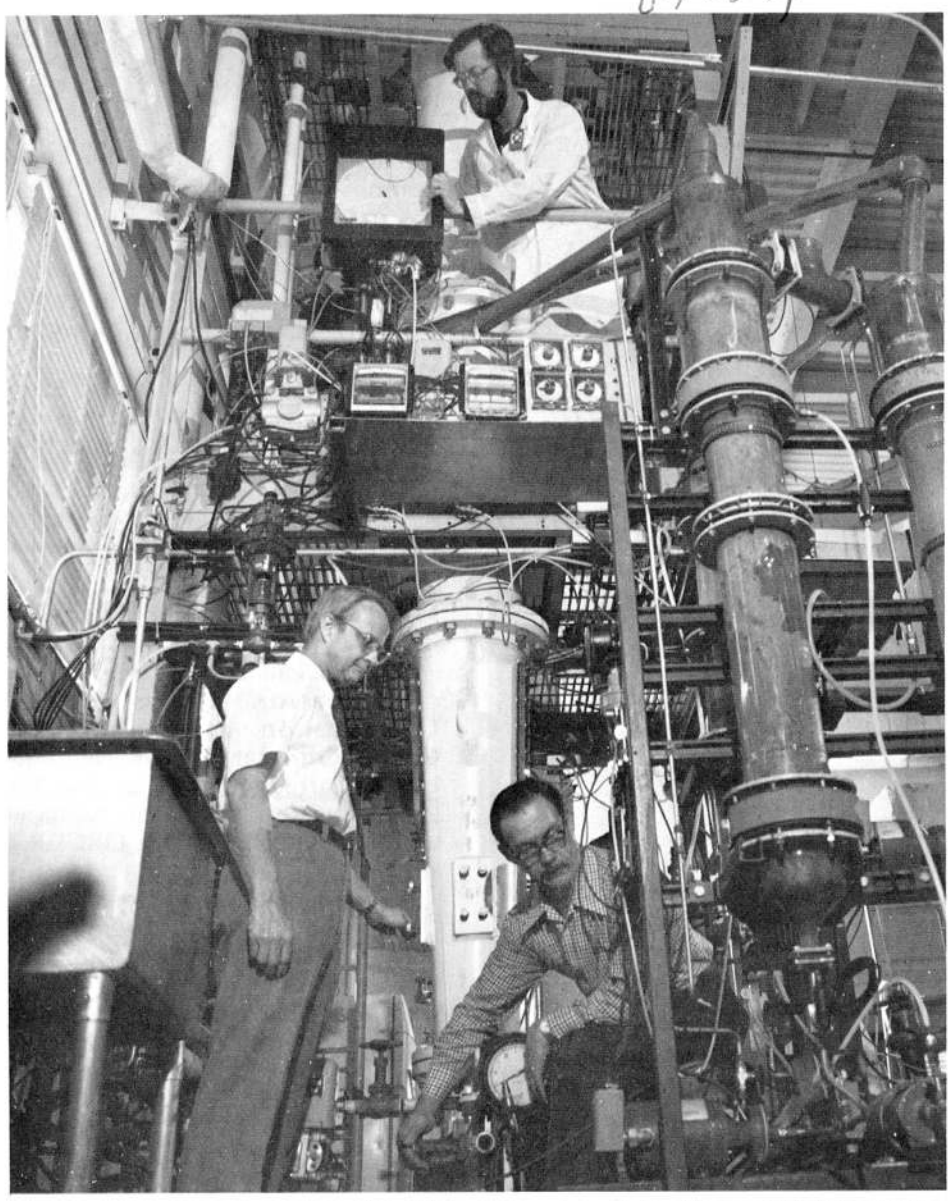
Alvin B. Ingram and Frankie L. Smith.

Patents granted

To Chester R. Fultz (retired), Kerry A. Maulden and L. Elkin Burkhart (retired), all of Y-12, for "Method for Joining Metal by Solid-State Bonding."

To Charles Asmanes, retired from the Y-12 Plant, for "Tool Holder for Preparation and Inspection of a Radiused Edge Cutting Tool."

0728-79



FLUIDIZED-BED BIOREACTOR—This pilot-scale version of the "Tapered Fluidized-Bed Bioreactor," is a unique biological fermentation system for the removal of phenols and other harmful products from waste water resulting when coal is converted to liquid and gaseous fuels. Its developers are, from left, Charles D. Scott, Douglas D. Lee and Charles W. Hancer.

SOLAR CELL DEVELOPMENT—A new laser technique for fabricating high-efficiency, low-cost solar cells that can be used to convert solar energy directly into electrical energy was developed by Jagdish Narayan, Rosa T. Young and Richard F. Wood of ORNL. Wood, left, holds one of the solar cells under a small solar simulator, while Young and Narayan examine equipment used in measuring the cell's efficiency.

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NUCLEAR DIVISION
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UNION CARBIDE

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PADUCAH
Darlene Mazzone, Bell 208

IR-10

Five developments at facilities oper
named winners of "I-R 100" awards f
technology" advances.

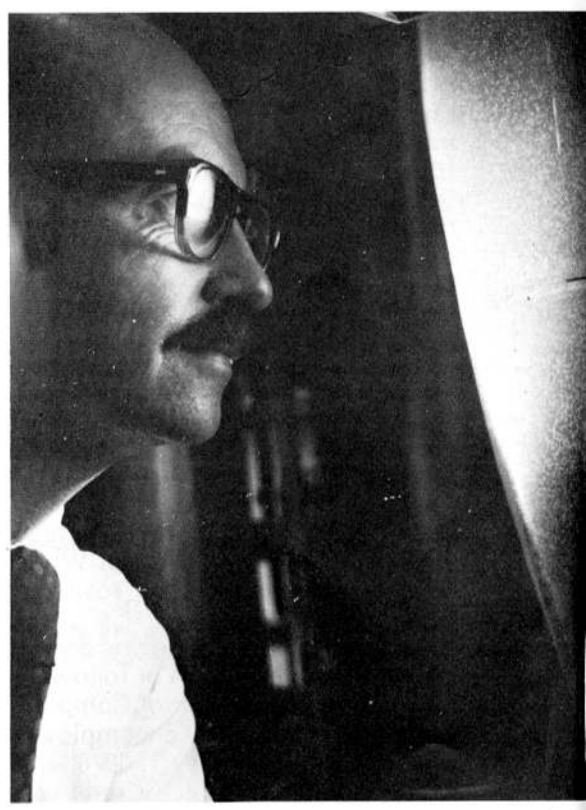
The awards are for achievements by
and ORNL.

The selection was announced
search/Development," which will pres
Museum of Science and Industry in Ch

The five Oak Ridge winners in the a

- An automated adaptive electron-bea
- A laser method for low-cost fabricat
- A "bioreactor" for cleanup of liquid
- A remote fabrication process for ne
- A new high-temperature, high-stren

WELDING TEAM—Four members of the team developing
Keith A. Kitzke, Clyde M. Davenport, James H. Burkhardt
Division. (John J. Henry, Development Division, is seen i



SAFEGUARDS NUCLEAR MATERIALS—A novel process f
plants was developed by a team of engineers and scientis
microspheres and loading these spheres into metal claddi
operator exposure and aids in safeguarding nuclear ma
watches as the spheres are loaded, while Robert Suchon

0 awards for '79 developments

ıted by the Nuclear Division have been or the year's 100 most significant "new

technical staff members at the Y-12 Plant

by the magazine, "Industrial Re- ent the awards today in ceremonies at the iicago.

ınnual competition are:

m welding/seam alignment system (Y-12);

on of high-efficiency solar cells (ORNL);

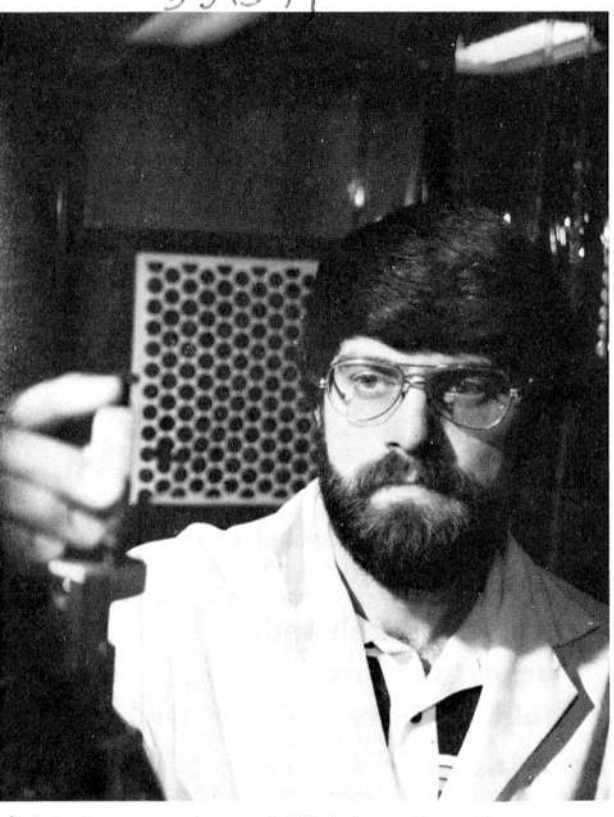
coal-conversion effluents (ORNL);

v and recycled nuclear fuel (ORNL); and

gth alloy for energy applications (ORNL).

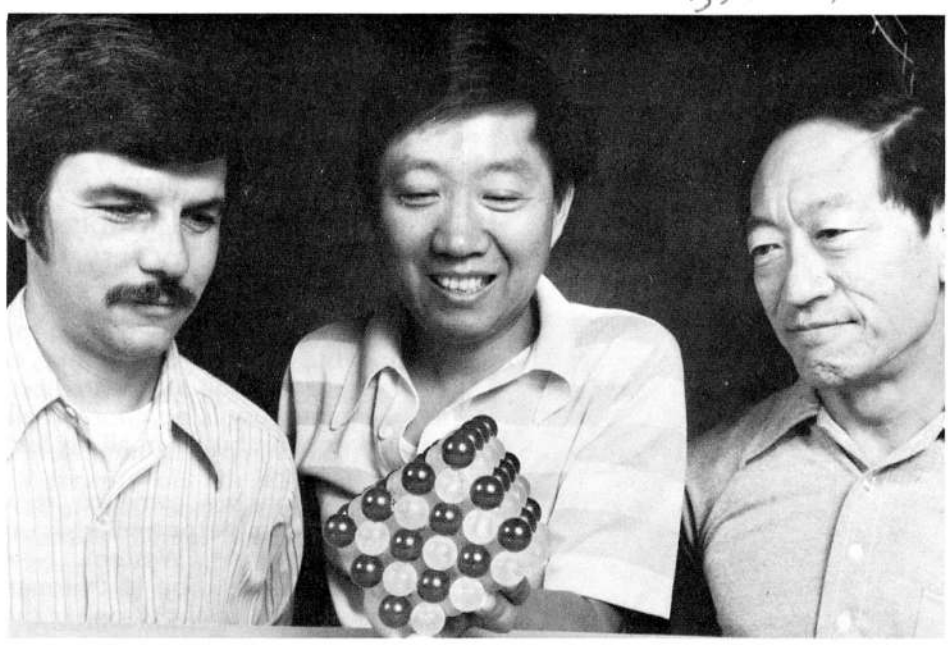
Y-12's electron-beam welding alignment system are, from left, r.; Development Division; and George W. Brandon, Assembly n inset).

3343-79



r fabricating new and recycled fuel for use in nuclear power s at ORNL. The process involves forming dense, free-flowing g tubes. It is remote and reliable, involves fewer steps, reduces erials. In this double-exposure photograph, Paul Haas, left, el, adjusts equipment used to load them.

3344-79



NEW ALLOY—The DOT alloy, a new high-temperature, high-strength material with several energy-system applications, has been developed by engineers at ORNL. Here, inventors Anthony C. Schaffhauser, Chain T. Liu and Henry Inouye examine an atomic model which demonstrates the long-range ordered crystal structure existing in the DOT alloy. The red balls represent vanadium atoms, and the white balls are for the iron, cobalt and nickel atoms.

Description of award winners

Automated Adaptive Electron-Beam Welding Beam/Seam Alignment System—A valuable tool for precision welding operations, this system was developed at the Y-12 Plant by James H. Burkhardt Jr., Clyde M. Davenport, John J. Henry and Keith A. Kitzke, Development Division; and George W. Brandon, Assembly Division.

The system is applicable to tasks in which the welding beam must be aligned within 0.05 mm to avoid causing a weak joint. It uses optical and video techniques to determine the position of a weld beam, to compare it to a predetermined standard and to control its position during the welding operation. Corrections are made automatically during the joining process.

Low-Cost Laser-Diffused Solar Cells—This laser technique for solar-cell fabrication shows promise of providing a means for converting solar energy directly into electrical energy at a cost substantially lower than when solar cells are made by conventional methods.

The technique, developed by Jagdish Narayan, Rosa T. Young and Richard F. Wood of ORNL's Solid State Division, may be ideally suited for producing the large quantities of solar cells that are likely to be required in meeting future energy needs. It involves the use of high-intensity laser light to alter the electrical properties of silicon and other semiconductors.

Tapered Fluidized-Bed Bioreactor—This unique biological fermentation system can be used to remove phenols and other harmful products from waste waters that result from coal conversion and industrial processes. It was developed by Douglas D. Lee, Charles D. Scott and Charles W. Hancher of ORNL's Chemical Technology Division.

Converting to clean liquid and gaseous fuels is a major focus of the nation's energy program. However, coal conversion creates a number of potentially hazardous byproducts, some of which appear in process waste water. Among these byproducts is a well-known class of toxic and cancer-causing agents known as phenolic compounds.

The Oak Ridge engineers have applied their knowledge of biological fermentation processes to this problem to assure that the production of synthetic fuels will be environmentally acceptable.

Ductile Ordered Transition-Element Alloys—This development represents a major advance in the design of superalloys for application in advanced fossil, nuclear and solar energy-conversion systems. The Ductile Ordered Transition-Element (DOT) alloys are unique among presently available high-temperature structural materials in that their strength increases rather than decreases at temperatures up to the range of 1500-1700 degrees Farenheit. The development has been carried out by Chain T. Liu, Henry Inouye and Anthony C. Schaffhauser of ORNL's Metals and Ceramics Division.

The DOT alloys offer a unique combination of high-temperature strength, fabricability and long-term stability. They are distinguished from conventional alloys by a "long-range ordered" atomic structure in which the atoms of the alloying elements form a regular pattern in the crystal structure rather than being distributed randomly. This results in closer packing and stronger binding among atoms in the ordered lattice, giving rise to significantly improved physical, chemical and mechanical properties. Processes involving diffusion, such as corrosion, creep and vaporization, are slower in the DOT materials. In addition, some DOT alloys exhibit a higher elastic modulus, which results in greater structural stiffness.

Gel-Sphere-Pac Nuclear Fuel Fabrication Process—This is a unique process for the fabrication of new and recycled fuel for use in nuclear power reactors. It involves the formation of dense, free-flowing microspheres and the loading of these spheres into metal cladding tubes.

Developed by a team of engineers and scientists in ORNL's Chemical Technology and Metals and Ceramics Divisions, the process represents major advances in processing efficiency and fuel performance capability. Since the fabrication technique is remote, involves fewer steps and is more reliable than those currently in use, it reduces operator exposure and aids in safeguarding nuclear materials.

Developers of the gel-sphere nuclear fuel fabrication process are: Peter Angelini, Ronald L. Beatty, John M. Begovich, Anthony J. Caputo, Ralph G. Donnelly, Paul A. Haas, Francis E. Harrington, Claude C. Haws, James A. Horak, Frederick A. Kappelmann, Walter J. Lackey, Rex E. Leuze, Milton H. Lloyd, Ernest L. Long Jr., Adolphus L. Lotts, James E. Mack, Roy E. Norman, Karl J. Notz, Arvid E. Pasto, Allen D. Ryon, Roger D. Spence, David P. Stinton, Robert R. Suchomel and John S. Vavruska.

Next issue. . .

The next issue will be dated October 4. The deadline is September 26.

PH 79-3458

SOUTH CAROLINA STATE ALUMNI—from left, Robert Sweeny, Bessie Jowers, Freda Harry, Ken Epps, Frank Gethers and Shirley McConico. The Oak Ridge/Knoxville Chapter of the South Carolina State Alumni Association sponsored a tour of Oak Ridge operations for a group of 45 precollege Comprehensive Employment Training Act (CETA) students from their college in Orangeburg, S. C.

recreationotes. . .

Paducah retirees enjoy big picnic

wanted. . .

ORNL

CAR POOL MEMBERS from Fountain City area, Knoxville, to East Portal, 8-4:30. Brenda Hatchett, plant phone 4-4485.

CAR POOL MEMBERS from Kingsgate Subdivision (Concord area) to East or North Portal, 8-4:30. Nancy Wright, plant phone 4-6273, home phone 966-5228.

RIDER FOR VAN POOL from West Knoxville to East, South or West Portal, 8-4:30. Dean Treadway, plant phone 4-6580, home phone 584-4879.

RIDE from Cumberland Estates, Knoxville, to either portal, 8-4:30. Ray Cinnamon, plant phone 4-5665, home phone 584-4534.

JOIN CAR POOL from Jefferson Center, Oak Ridge, to East Portal, 8-4:30 shift. M. Yasin, plant extension 4-6675.

VAN POOL RIDERS from Oak Ridge East Village area, any portal, 8-4:30 shift. Betty Cornett, plant extension 6-0571, home phone 483-1818.

RIDE WANTED or will JOIN CAR POOL from Inskip/Cedar Lane area, Knoxville, to East Portal, straight days. Rosemary Robertson, plant phone 4-4485.

JOIN or form flexible car pool from South Knoxville, Ft. Sanders area, to any portal, straight day. Al Crook, plant phone 4-4913, home phone Knoxville 577-5377.

Y-12

VAN POOL RIDERS from West Town / Kingston Pike / Cedar Bluff area to any portal, 8-4:30. C. W. Greene, plant phone 4-0437, home phone 690-3762.

RIDERS from Harriman, via I-40 to Kingston, to Bear Creek, West, Central, North and Biology Portals, straight day. W. L. McKinney, plant phone 4-1277, home phone Harriman 882-1827.

RIDE from East Village, Oak Ridge, to North Portal, straight day. Angie Puckett, plant phone 4-0377, home phone Oak Ridge 483-7116.

RIDE or will JOIN CAR POOL from Sweetwater to Y-12's Central Portal, 8-4:30 or 7:30-4 shift. George May, plant phone 4-7272, home phone Sweetwater 337-7322.

THREE VAN POOL RIDERS from North Knoxville to any portal, straight day. Ira Hickman, plant phone 4-2686 or 4-2687.

TOWNSITE

RIDE or will JOIN CAR POOL from Gleason Road/Walker Springs area, West Knoxville, to Purchasing (townsite) 8-4:45. Betty Hurt, plant phone 6-1437; home phone 693-0468.

Patent granted. . .

To Jinchoon Kim, ORNL, for "Use of Predissociation to Enhance the Atomic Hydrogen Ion Fraction in Ion Sources."

Retiree writes from New Mexico

A Nuclear Division retiree is having the "time of his life" in New Mexico, as he and his wife carve out new careers in the West. Shipley Johnson, formerly in ORGDP Separation Systems, writes the Union Carbide Retirees Association the following interesting letter:

"I was indeed happy to receive your note, confirming our membership in UCRA. Also, to see that we retirees were responding so well to this chance to maintain some contact with each other. It is so easy for people to drive apart under these circumstances.

"Looks like UCRA is keeping the 'troops' busy, from your outline of coming events. If all of you are like I am, keeping busy is no chore at all. I've never been busier in all my life! So far, so good.

"The reason we came to New Mexico is a simple one—Barbara is working here at Western New Mexico University. She is chairman (she calls herself 'chairperson') of the Home Economics Department and is busy as a bee building the department up from the somewhat run-down condition it had gotten into. I don't think I've ever seen her happier.

"Southwestern New Mexico, where Silver City is located, is in the foothills of the southern end of the Rockies. Like the people of south-central Florida, we think of this part of New Mexico as the 'working' end of the state, as opposed to tourist New Mexico, which is largely in the northern half.

"Cattle-raising and mining are the big things here, with copper mining predominant over the small amounts of silver and gold prospecting still going on. Silver City owes its founding to a silver strike in the early 1870's which looked rich at the time but soon largely played out.

"All in all, this area is almost ideal as a place to spend the rest of one's life, at least for me. I already think of it as home, and I'd be reluctant to consider changing. Barbara feels the same way, so I guess we'll be here for a while.

"If any members of UCRA are considering a Southwestern tour, individually or as members of a group, I invite them to visit our area. It has much to offer, both in the way of wild scenery and hospitable people who have made Barbara and me feel 'right at home.' If any of you plan to come out this way, we'll do our best to make you feel right at home!

"I'll stop for this time with best wishes to everyone for the thorough enjoyment of his/her retirement years. For me, the secret seems to lie in keeping busy, but I don't need to suggest **that** to ex-Carbiders!

"Take care, all of you, and write me a line when you have time. I don't know when I'll be able to get back there, but I'll certainly look a lot of people up, when and if I do."

/s/ Shipley Johnson

Retirees set picnic October 5

Union Carbide Retirees Association is planning its second big picnic of the year. . .Friday, October 5, at the Carbide Park.
The schedule is as follows:

10 a.m.	**registration**
11:30	**music**
12	**lunch**
1 p.m.	**informal meeting**
1:30 on	**music and other entertainment.**

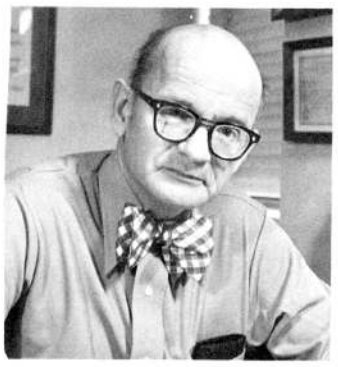
Furnished

- **Meat, bread, coffee, tea. . .cups, plates, silver and napkins.**

UCRA's bring

- **A covered dish and dessert to share; folding chairs**
- **Yourself**

Volunteer Entertainers should call Justin Aylor, telephone 457-2798. Attend and 'have a nice day' with old friends.



Profile of suicide

by T. A. Lincoln, M.D.

Approximately 200,000 suicides are attempted and 25,000 are completed each year in the United States. Suicide is the third most common cause of death in men and fourth in women between the ages of 15 and 34. For most physicians in family practice in any one year, roughly one in 100 patients will threaten suicide and one in 10 will have suicide ideas at some time. Only in the ages from 1-14 and over 75 does suicide fail to meet the top ten in causes of death. Although obviously a major public health problem, relatively little progress has been made in preventing this cause of death.

'Hot-line' effects

Suicide prevention centers have contact with only an estimated 2 to 6 percent of those who eventually successfully kill themselves. Although many cities have these prevention centers and have 24-hour "hot-lines" where people feeling hopeless and abandoned can call for help, their effectiveness is questionable. One expert doubts if they have had a perceptible effect.

And yet, it is claimed that two-thirds of suicidal patients will somehow attempt to communicate their intent prior to their suicide. Many will have visited a physician from a few hours to a few months before the suicidal attempt. Recognizing the candidate is difficult under the best of circumstances. The number of distraught, depressed and hopeless patients who take their lives is small. Being sure enough of a suicide potential to take dramatic action including hospitalization is not easy.

Emotional problems

In a study of 151 suicidal patients at an emergency department in a large, urban general hospital, 65 percent had no history of emotional problems. Fifty-six percent were acting impulsively in the early phases of a crisis while only 9 percent were in the midst of more chronic problems.

In several studies, people who complete suicides are more likely to have left a note than those who make an attempt but do not succeed. Those who leave a note have probably planned their sucide attempt over a longer period of time. The percentage who are unsuccessful in their suicide attempt who have left a note varies in different studies from 1 percent to 24 percent. Thus, many suicides appear to be fairly impulsive and therefore crisis intervention should work better than it does.

Although trying to describe high risk candidates is probably of greatest value to physicians who may have an opportunity to intervene, it could be helpful to family members and friends.

Non-white young women who are separated, divorced or widowed and relatively poor are at a much increased risk for a suicide attempt. Older white males who live alone and are often in poor health are at the highest risk for completed suicides. In both cases, drug abuse and alcoholism are common. Twenty-five percent of all suicides involve alcoholics. Some suicides have had serious mental illnesses which may have been under treatment. Many have no obvious depression or mental illness but may have experienced a recent personal loss. The loss may be of a loved one through death, divorce, separation or violent argument.

Sometimes the loss may be of self respect or position in a family or group. People who have a long history of unsatisfactory personal relationships with a low frustration tolerance and poor impulse control may be candidates. Those who have trouble expressing their feelings openly are at increased risk. The individual who has faced a serious personal loss with little emotion may be more vulnerable. Withdrawal from social contact is a symptom of concern. Expressions of helplessness, hopelessness, worthlessness, guilt, anger and apathy often precede a suicide attempt.

When the communication with other members of the family or friends has been disrupted by argument, the suicide potential is heightened. The more agitated and restless a person is, the more likely the suicide attempt.

Detection difficult

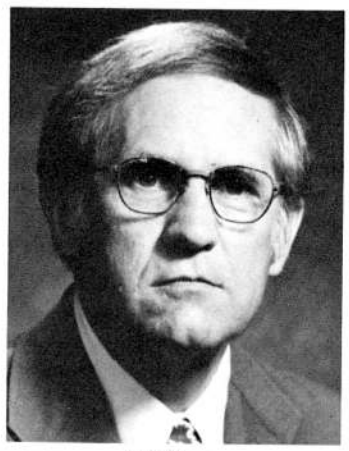
In spite of the above profile, detecting suicide candidates is extremely difficult. If a family member panics and frantically tries to get the suspected candidate under care when the problem is not too serious, the reaction can be severe and later, when the hazard is real, the cooperation may be nil.

Probably the most important thing a family member or friend can do is to remain calm and supportive in spite of the severe stress which may be occurring. Consultation with the plant or family physician is obviously wise. When the family or friends become angered at a person's unwillingness to take positive action, the risk is greatest. The investment in calm support during a crisis can sometimes be harvested later on by acceptance of the need for professional help.

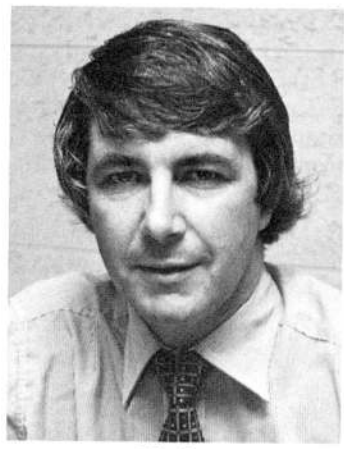
Volleyball. . .

The Recreation Department is now calling for team entries for the upcoming Volleyball season. The Deadline is October 1, 1979. Interested team captains should call the Recreation Office, 4-1597, for entry forms and rules.

about people. . .



White



Clark

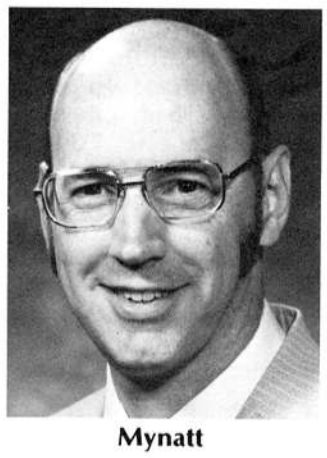
James C. White, Technical Services Manager for the production facilities of the Nuclear Division, has been reelected secretary of the Analytical Chemistry Division of the International Union of Pure and Applied Chemistry (IUPAC) for a four-year term. His reappointment is effective following the IUPAC General Assembly in Davos, Switzerland, September 2-10, 1979.

The IUPAC is a voluntary nonprofit association of organizations representing the chemists of member countries. Its objectives include the promotion of continuing cooperation among the chemists of member countries, and the study of topics of international importance to pure and applied chemistry that need regulation, standardization and codification.

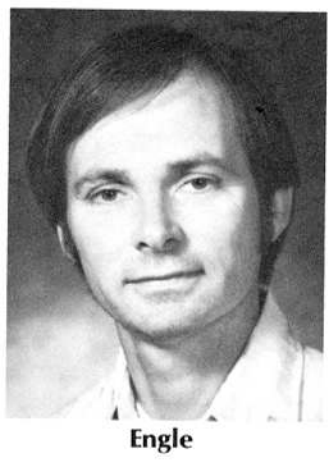
* * * * *

An Australian physicist recently appointed to the research staff of the Solid State Division at ORNL has been awarded the Pawsey Medal of the Australian Academy of Science. **Greg Clark,** principal research scientist with the Division of Mineral Physics of the Commonwealth Scientific and Industrial Research Organization in Sydney, Australia, will join ORNL on a permanent basis this fall. During 1976-77, he spent 18 months at the Laboratory as a guest investigator.

The Pawsey medal, commemorating the late J. L. Pawsey who pioneered the use of radio techniques in astronomy, is awarded annually to a young Australian scientist for "distinguished research in experimental physics." The award to Clark recognizes his recent research utilizing nuclear techniques to investigate the physical properties of solids.



Mynatt



Engle

Fred R. Mynatt, ORNL Central Management Offices, and **Ward W. Engle Jr.,** Engineering Physics Division, ORNL, have received Technical Achievement Awards from the American Nuclear Society, Radiation Protection and Shielding Division, for their leadership in solving radiation transport problems.

Mynatt, director of Nuclear Regulatory Programs at ORNL, was cited for his leading role in the development of the two-dimensional discrete-ordinates method, DOT, which was designed to be a practical tool for the shielding analyst.

Mynatt was chairman of the Radiation Protection and Shielding Division, 1976-77. He joined Carbide in 1965, and has served as head of the nuclear engineering analysis section in ORNL's Engineering Physics Division. He is also an American Nuclear Fellow.

Mynatt and his wife, Elaine, have three children and reside in Concord.

Engle, Engineering Physics research staff member, was cited for his leadership in the development and application of discrete-ordinates methods for solving radiation-shielding problems.

Prior to his present position, Engle worked in the Computer Technology Center, ORGDP, now part of the Comptuer Sciences Division. Before joining Carbide in 1964, he worked with Atomics Internation

Prior to his present position, Engle worked in the Computer Technology Center, ORGDP, now part of the Computer Sciences Division. Before joining Carbide in 1964, he worked with Atomics International.

He and his wife, Susan, live in Lenoir City.

New ORGDP supervisors

Three new supervisors have been named in the Maintenance Division at ORGDP and another promoted to the Standards Laboratory. Eleanor J. Button, Eva B. Graves and Anita R. Ishman are new supervisors in Maintenance; and Bernard Dyer is a new supervisor in the Standards Laboratory.

Dyer, a native of Morgan County, joined Union Carbide early this year as an instrument mechanic. He was an industrial electronics instructor for the Morgan County Board of Education and attended the University of Tennessee. He and his wife, the former Mary Maden, live at Route 2, Wartburg. They have six children, Michael, Mitchell, Pamela, Bernard, Patricia and Portia.

Button, a native of Harriman, joined Union Carbide in 1977 after working in her husband's grocery and as a sales clerk in Harriman. She and her husband, William, live at Route 7, Harriman. They have a son, Randall.

Graves was born in Rockwood, and attended Tennessee State University, before joining Union Carbide in 1974. She worked for the Internal Revenue Service in Covington, Ky., before coming here. She and her husband, Frank, live at 193 Evans Heights, Rockwood. They have three children, Dana, Denis and Earlene.

Ishman joined Union Carbide in 1976 after working in the family furniture store in Rockwood and as a legal secretary in Harriman. She is now attending Roane State Community College. She and her husband, Paul, live at 510 North Kingston Avenue, Rockwood.

PH79-3409 PH79-3300

Button

Graves

79-3299 79-3553

Ishman

Dyer

Paducah's Elliot earns CPS

Phillis S. Elliott

Phillis S. Elliott, Paducah's Security Department, recently joined 10 other Nuclear Division secretaries in successfully completing the National Secretaries Association's Certified Professional Secretary examination. Elliott was one of only 12 candidates who attained the professional designation in the state of Kentucky.

Elliott earned an Executive Secretarial Degree from Draughn's Business College in 1973 and is working toward an Associate Degree in Business Management Technology at Paducah Community College. She was previously employed by the Department of Housing and Urban Development and the Four Rivers District Council of Carpenters before joining Union Carbide in 1976.

She is a member of the Paducah Kentucky Lake Chapter of NSA becoming the organization's seventeenth CPS. Kentucky lists 150 certified secretaries.

Elliott's husband, Jim, works in the plant's Mechanical Engineering Department. They reside on Route 6, Paducah, with their children, Laura and Brent.

New lieutenant

PH79-334

Cox

Jerry Cox has been promoted to a Fire and Guard lieutenant at ORGDP. A native of Jacksboro, he completed the Training and Technology program at Y-12 in 1971 and went to work in Y-12 as a material handler. He later transferred to ORGDP's Fire Department.

Cox has attended several courses at the State Fire School in Murfreesboro and completed the Fire Fighter Course at Louisiana State University. He is active with the Jacksboro Volunteer Fire Department and other civic affairs. He and his wife, Margetta, live on Jacksboro Pike, with their children, Jill and Richard.

The energy advisor. . .

Editor's Note: Recently we began a series of energy conservation features which will be alternated with questions from readers to the "Energy Advisor" on conservation-related topics. The articles will be written by staff members about their own experiences or research, with the Energy Division's Merl Baker (alias the Energy Advisor) coordinating the series. Employees with questions or ideas for articles should contact their **Nuclear Division News** *representative listed on the masthead.*

QUESTION: Since lights contribute heat, doesn't the practice of reducing lighting levels mean that more energy is expended by a building's heating system to make up the difference?

ANSWER: Yes, more heat must be furnished to compensate for that lost by not burning the lights. However, during the cooling season, this also means that less heat must be removed by the cooling system. If the heating is done by steam, as in many plant facilities, less fuel is used to produce the compensating amount of heat than to generate the electricity which produces the same effect from lighting.

QUESTION: There seems to be some confusion about when to turn your lights off depending on how long you will be away from the office. What is the answer to this problem?

ANSWER: The confusion is understandable. Before the increase in electric power costs, it made sense from a replacement cost standpoint to burn fluorescent tubes continuously. Now it is both energy conserving and economic to turn the lights off whenever you leave your office or laboratory.

Savings Plan-Personal Investment Account

	Fixed Income Fund	UCC Stock	Equity Investment Fund
December 76	13.0553	59.2723	8.8166
December 77	14.2017	40.9096	8.0427
June 79	16.1669	37.3111	9.2228
		35.6488*	
July 79	16.2850	38.8933	9.2873
August 79	16.4042	42.3163	9.7902

*Dividend reinvestment and stock purchase plan

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 9.1% for 1979. Union Carbide stock values are the average cost of stock purchased during the month. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. The price of each unit is determined by dividing the total value of the securities by the number of units in the Fund.

Warning - deer crossing!

In addition to being the time of the year when most of us are apt to oversleep, these cool, foggy mornings of fall are also the time when most deer/vehicle accidents occur on highways on the Oak Ridge Reservation.

The number of deer killed by vehicles this year already is 68 percent more than this time last year. The 1978 total was 45, while the total number killed through the second week of September of this year was 34.

Motorists are again cautioned to observe deer crossing signs and to be alert even in areas where there are no signs. The deer are most active between September and December, and can dart in front of a car without the slightest bit of warning.

Although there has been no injury to persons involved in the accidents, so far, damage to many of the vehicles has been extensive.

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